

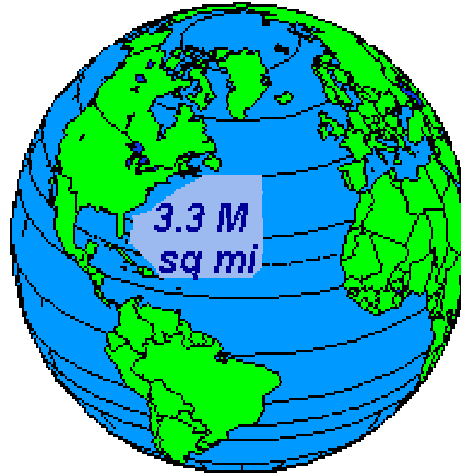
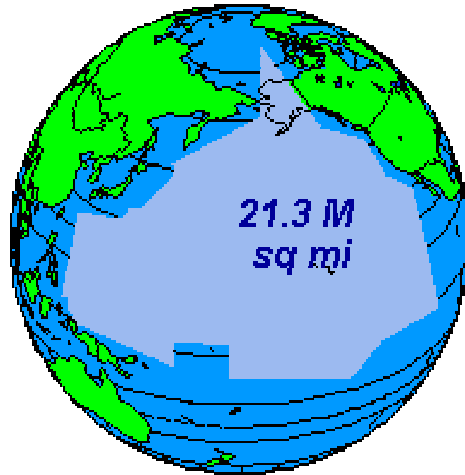
Interagency Air Traffic Management Integrated Management Team Meeting



***Kevin Chamness
AUA-600***

November 18-20, 2003

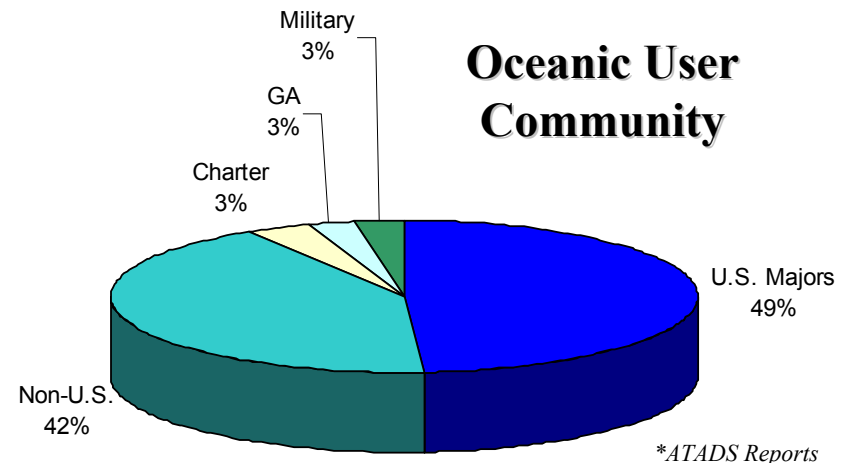
The Oceanic Environment



The FAA controls approximately 25 million square miles of airspace in the Atlantic, Pacific, and Arctic Oceans

4 International Civil Aviation Organization (ICAO) regions with different international partners, unique aircraft spacing and coordination rules:

- Pacific
- North Atlantic
- Caribbean
- North America



The Oceanic Controller Workstation



Limitations of Current System: Controller Perspective Oakland

Lack of Integrated Tools and Flight Data:

- **Communications**
- **Navigation**
- **Surveillance**

Integration and
decisions
performed here

The Bottom Line

**Workload
Inefficiencies**

Manual Paper Strip
Maintenance





Advanced Technologies and Oceanic Procedures (ATOP)

What is ATOP?



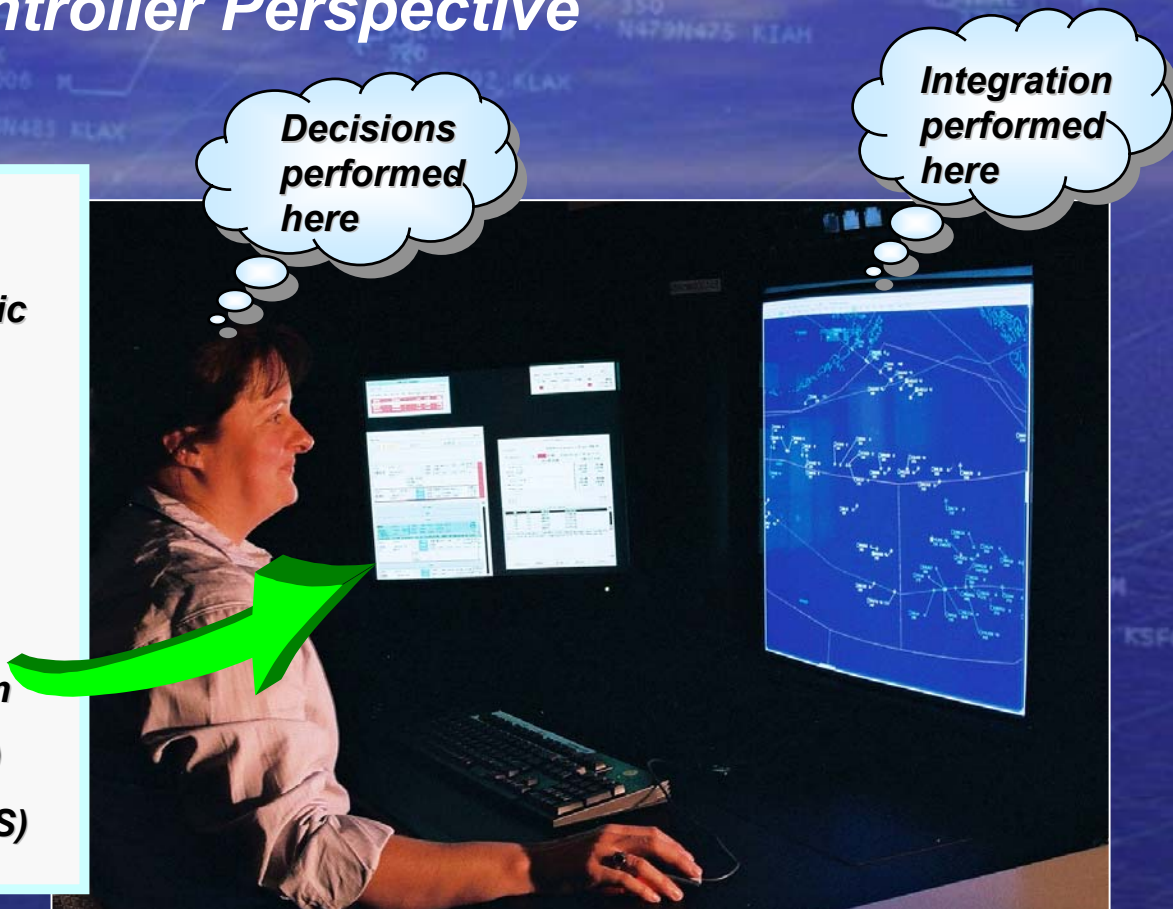
- ➔ ***ATOP will replace oceanic air traffic control systems and procedures and modernize the Oakland, New York and Anchorage Air Route Traffic Control Centers.***
- ➔ ***ATOP fully integrates flight and radar data processing, detects conflicts between aircraft, provides data link and surveillance capabilities, and automates the manual processes used today.***
- ➔ ***ATOP will provide a fully modernized oceanic air traffic control automation system, installation, testing, training, common procedures and lifecycle system maintenance.***

Advantages of ATOP

Controller Perspective

Integrated Tools:

- System-maintained electronic flight data
- Controller Pilot Data Link Communications (CPDLC)
- Air Traffic Services Interfacility Data Communications (AIDC)
- Automated conflict detection
- Radar Data Processor (RDP)
- Auto. Dep. Surveillance (ADS)



The Bottom Line

ATOP allows controller to focus on providing service to customers rather than manual and paper strip-based tasks

Conflict Probe

- System Finds Conflicts - Controller Resolves Conflicts
- Aircraft / Aircraft and Aircraft / Airspace
- Probe Runs Automatically on All Trajectory Updates
- Applies Appropriate Separation Standard
- System Enforces Pre-Delivery Trial Probe for All Clearances
- Controller Tools also Available

CONFLICT SUMMARY						
Override				Help		
Intruder	Att	Active	Att	Ovrd	Type	StartTime EndTime
TEST8	-	TEST1	-	X	1901	1910

Conflict Report

crossing

REQUIRED 15 minutes (50 nm) 1000 ft

89 degrees

LOS

19:01

ACTUAL

3 min 12 sec (49 nm) 0 ft

PASSING POINT

CONFLICT SEGM

B744					5843N	5948N
TEST8	F290				17356W	17453W
M085					1901	1910
B744					5922N	5854N
TEST1	F290				17245W	17454W
M085					1901	1910

Draw

Close



Electronic Flight Data

- System automatically maintains data, controllers notified of significant changes via color-coding
- Variety of typical annotations handled automatically
- Quick access to strip(s) of interest through “working bay”
- Because of conflict probe, strips do not have to be posted by fix and continuously scanned as in today’s environment

3335	B744		NEONN	NANZA	6013N	NOLTI	NAYLD	NULUK	NATES	PANC	T
NWA113	MRDW	390			16835W					RJAA	N
3	M085		1953	2003	2005	2017	2026	2039	2130	R	
			NIKLL	NYMPH	NUZAN	NIPPI					
			2145	2150	2214	2239					

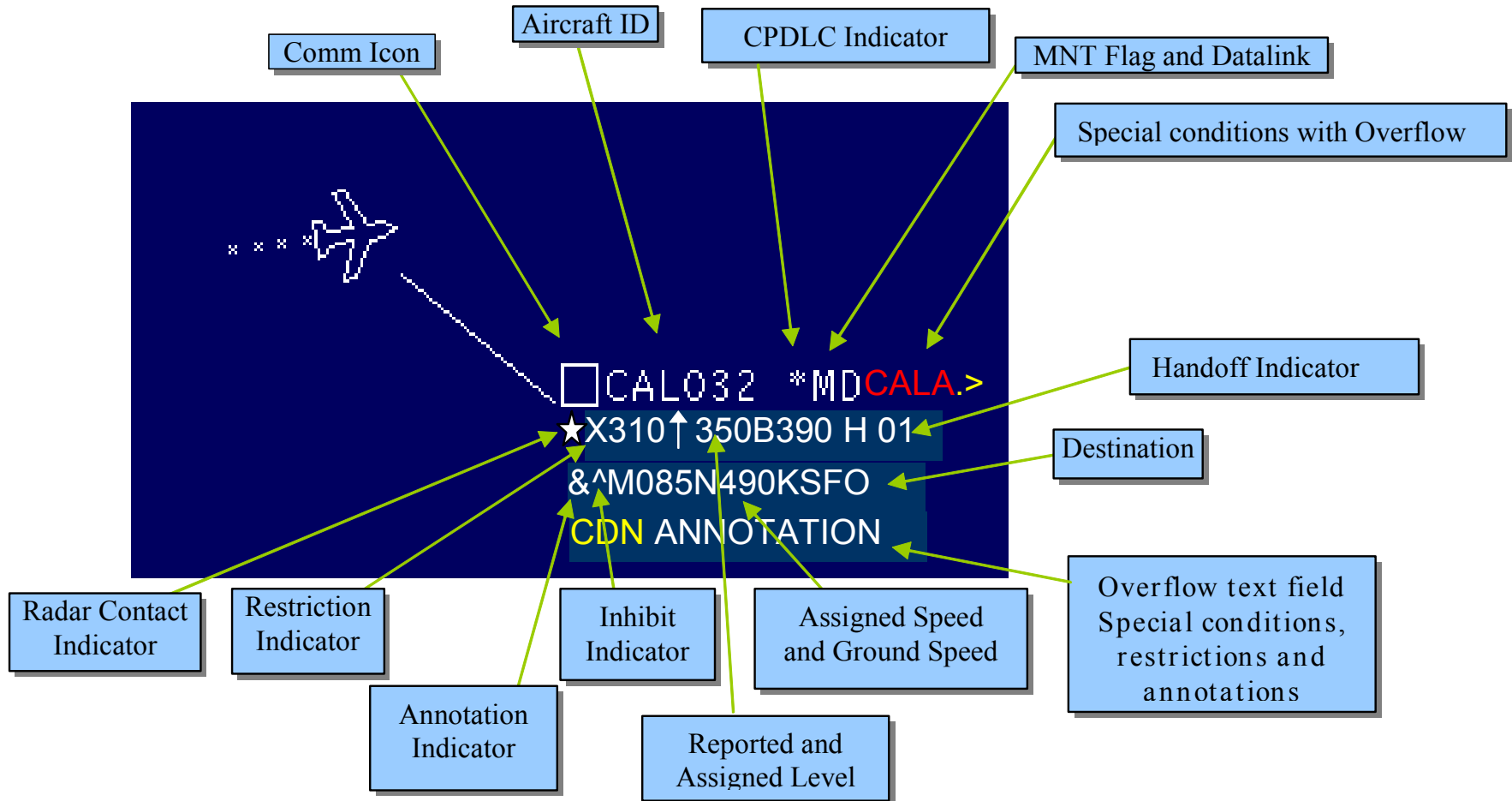
Single Strip Per Flight

Color Coding for Significant Events and Indicators

Automatic ETA Updates

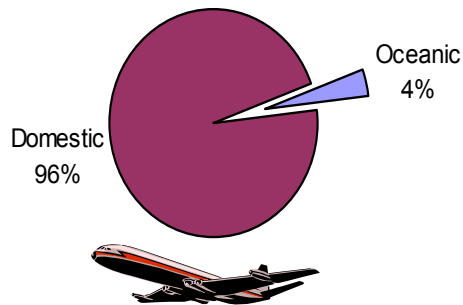
Datablock Fields

Adapted Fields

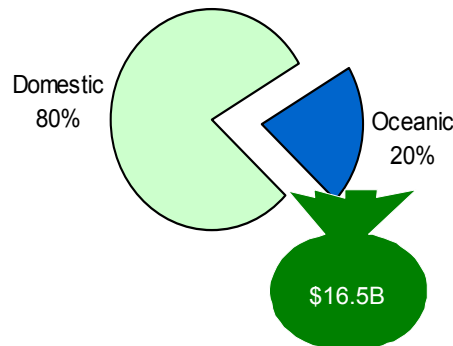


ATOP is Important to Industry

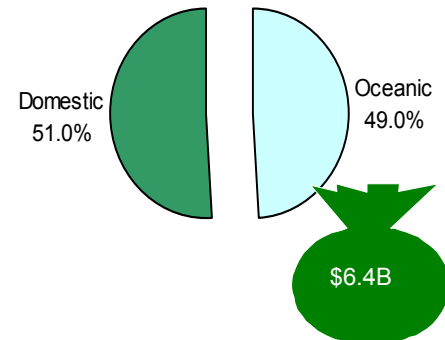
**Total Air Carrier Aircraft
Handled = 24 M***



**Passenger Revenue
\$80.9 B**



**Cargo Revenue
\$12.9 B**



* ATADS Reports – CY 2001

Benefits

- \$2.6B in estimated benefits due to savings in fuel consumption
- \$1.9B in estimated passenger value of time

Return on Investment

- Every \$1 spent by FAA results in approximately \$5 of benefits to both FAA & industry (without passenger value of time)

Features

- Fuel efficient routing
- Increased predictability, flexibility and sector capacity
- Reduced separation standards
- Controller workload reduction



Additional Oceanic Systems

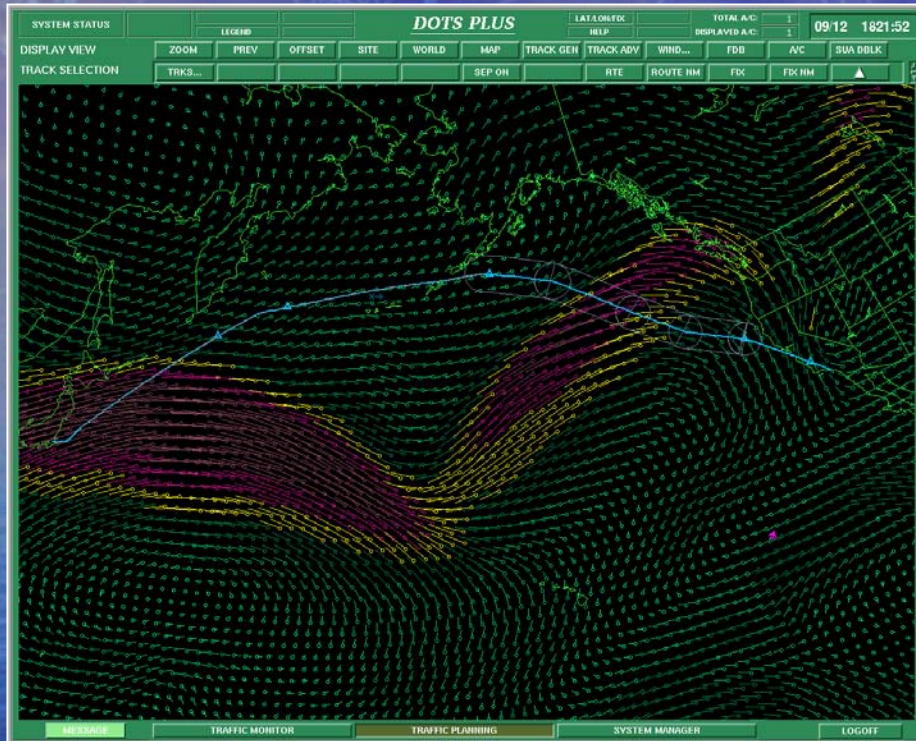
Microprocessor En Route Automated Radar Tracking System (Micro-EARTS)



Micro-EARTS is the only FAA surveillance system capable of operating in the en route, terminal and oceanic domains.

- ➔ ***Micro-EARTS is a surveillance system for domestic and oceanic operations***
- ➔ ***Micro-EARTS provides NEXRAD/WARP weather interface for Anchorage Center***
- ➔ ***Micro-EARTS will be a critical, integrated component of ATOP (Build 2)***

Dynamic Ocean Track System Plus (DOTS Plus)



***DOTS Plus is in
use at 5 locations:***

Oakland Center

New York Center

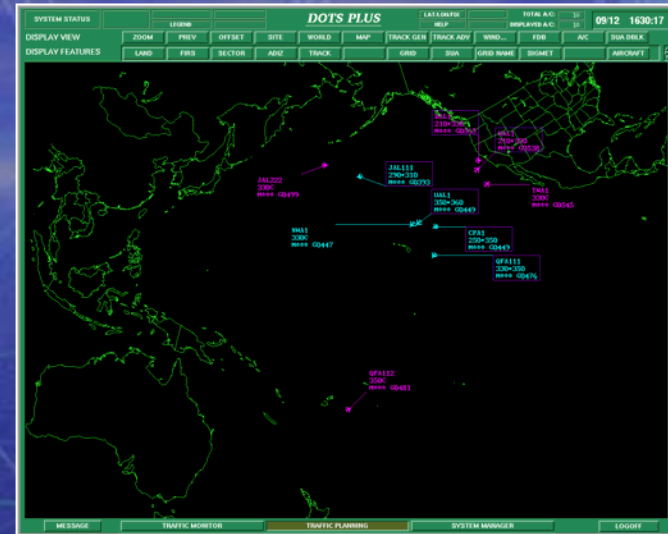
Anchorage Center

***Air Traffic Control
System Command
Center***

***William J. Hughes
Technical Center***

- ➔ ***DOTS Plus is used to assist in providing oceanic air traffic planning and management functions***
- ➔ ***DOTS Plus generates flexible track routes optimized for the greatest fuel efficiency using the weather forecasts and the separation requirements***

A man in a dark suit and light blue shirt is seated at a desk, looking at two computer monitors. The monitor on the right displays a 3D model of a mechanical part with a blue wireframe overlay. The monitor on the left shows a similar 3D model. The man's hands are on a keyboard. The background is a plain, light-colored wall.



- **Optimized Flexible Track Systems**
- **Oceanic Traffic Situation Display**
- **Integrated Track Advisory Function**
- **External Messages**
- **Track Definition Messages**
- **WARP/WINS weather functionality will be added to the system**